

CLAIMS

What is claimed is:

5 1. In a burst-type communication system comprising a transmitter and a receiver, a method of communicating information in a preamble synchronization sequence of a burst transmission, comprising:

10 selecting, at the transmitter, a selected one of a plurality of initial detection sequences, representing one or more first preamble information bits;

15 selecting, at the transmitter, a selected one of a plurality of unique words, representing one or more second preamble information bits;

transmitting, at the transmitter, said preamble synchronization sequence comprising said selected one initial detection sequence and said selected one unique word;

receiving, at the receiver, said preamble synchronization sequence;

20 detecting, at the receiver, said one initial detection sequence to produce first time synchronization information and to receive said one or more first preamble information bits; and

at the receiver, said one
synchronization information and
preamble information bits.
Method of claim 1, further com-
prising: locally encoding, at the trans-
mitter, said sequence before transmitting
said sequence; and
locally decoding, at the receiver,
said sequence before detecting
said sequence and before detecting said
preamble.
Method of claim 2, wherein the
sequence comprises one or more
pairs of words, wherein each pair of
words comprises a first initial detection
sequence, said sequence being the
logical inverse of said preamble.
Method of claim 2, wherein the
sequence comprises one or more pairs
of unique words comprising

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wherein each pair of unique words comprises a first unique word

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and a second unique word, said second unique word being a logical inverse of said first unique word.

5. The method of claim 1, further comprising:

5 direct sequence spreading, at the transmitter, said preamble synchronization sequence before transmitting said preamble synchronization sequence; and

10 despread, at the receiver, said preamble synchronization sequence before detecting said one initial detection sequence and before detecting said one unique word.

15 ~~6.~~ In a burst-type communication system, a receiver comprising:

a differential detector receiving a differentially encoded synchronization sequence and providing a base synchronization sequence comprising,

a first plurality of symbols, comprising an initial detection sequence, and

20 a second plurality of symbols, comprising a unique word;

an integrator receiving the base synchronization sequence and integrating the first plurality of symbols to produce an initial detection signal;

a threshold detector receiving the first plurality of symbols, detecting the initial detection, producing an initial detection strobe comprising symbol timing information, and providing a first preamble information bit; and

5 a unique word detector receiving the base synchronization sequence, detecting the unique word, and producing a second preamble information bit.

10 7. The receiver of claim 6, further comprising a PN matched filter receiving a direct sequence spread spectrum signal and providing the differentially encoded synchronization sequence.

15 8. In a burst-type communication system, a transmitter transmitting a preamble synchronization sequence, said preamble synchronization sequence comprising:

an encoded initial detection sequence comprising a plurality of symbols representing one or more first preamble information bits; and

20 an encoded unique word comprising a plurality of symbols representing one or more second preamble information bits.

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